

## **Green River Watershed – WRIA 9**

Low flows have been recognized as being limiting to salmonid production for many decades in the Green River Watershed. Perhaps no other basin has suffered such significant changes to its historic hydrology due to entire sub-basins being diverted into neighboring watersheds.

Significant alterations to the hydrology of this watershed include:

- Diversion of the White River in 1906;
- Diversion of the Cedar/Black River in 1913;
- Construction of Tacoma Water Headworks Diversion Dam in 1911; and
- Construction of Howard Hanson (HHD) dam in 1962.

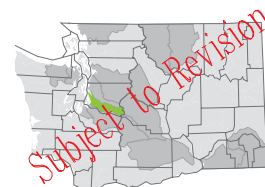
The City of Tacoma's diversion diverts up to 113cfs. The HHD was constructed to provide flood control and low flow enhancement in the lower river. Despite this, natural low flow conditions are not met 49 percent of the time, and during late summer instream flow requirements established by rule have only been met nine of the last 30 years. Low flows result in migration delays, a reduction in spatial rearing habitat, and alteration of adult spawning timing and location. This is leading to increased mortality through redd scour and adverse effect on early life stage development and fitness. Stream maintenance flood flows are also altered. Hydrology is further altered by development and other land use activities such as logging and forest road construction.

### **Big Soos Creek**

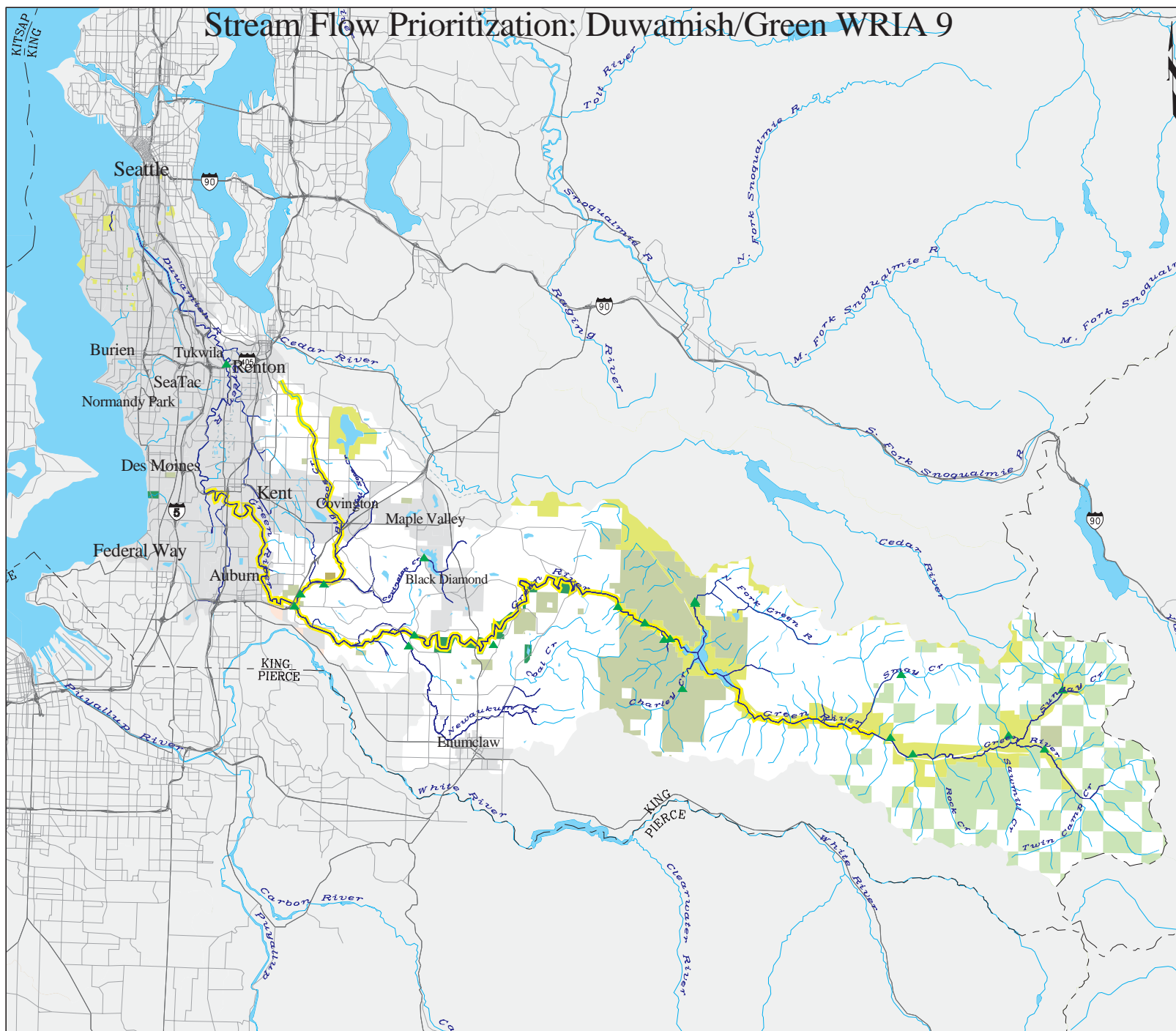
Low instream flows have been identified as a limiting factor to salmonid productivity although the cause has not been specifically identified. The western portion of the watershed has suffered land use changes with an associated increase in impervious surface, which has significantly altered the hydrograph of this basin. The most significant diversion is at the WDFW hatchery although numerous, small residential diversions also exist on this stream.

Due to water demands in the Puget Sound Metropolitan area and potential cost associated with water acquisition, there is not likely to be many opportunities to acquire sufficient water to effect meaningful change in salmonid production in this basin. Opportunities to enhance flows in the Soos Creek Watershed should be explored further.

# Stream Flow Prioritization: Duwamish/Green WRIA 9



Subject to Revision



- US Forest Service
- US Wildlife Refuge
- US Parks/Recreation
- USFS Wilderness Area
- Bureau of Land Management
- US Dept. Defense/Energy
- Wa. Dept. of Fish & Wildlife
- Wa. Dept. of Natural Resources
- State School/Hospital/Prison
- Wa. Parks & Recreation
- City/County Watershed/Park
- Tribal Lands
- Incorporated City

- Low priority stream
- Medium priority stream
- High priority stream
- Salmon/Bull Trout Spawning/Rearing area
- Other streams
- Canal/ditch/pipe
- USGS Stream Flow Gage
- Ecology Stream Flow Gage
- Water Right Purchase

- County
- Highway
- Local Paved Roads

WDNR/Ecology - Major Public Lands 2002 100k  
 WDFW/Ecology - Hydrography, 2000 100k  
 Ecology - WRIA, 2002 24K  
 WDOT - Transportation, 2001 24K  
 WDFW - Stream Flow Prioritization 2002  
 WDFW - Spawning/Rearing Areas 2002 100k  
 USGS/Ecology - Stream Gages 1:100k



Water Resources Program



WASHINGTON STATE  
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**ECOLOGY**  
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 12/13/02  
 sfp9-mpla